

# Cost/Benefit Analysis

## Evaluating Quantitatively Whether to Follow a Course of Action

You may have been intensely creative in generating solutions to a problem, and rigorous in your selection of the best one available. However, this solution may still not be worth implementing, as you may invest a lot of time and money in solving a problem that is not worthy of this effort.

Cost Benefit Analysis or CBA is a relatively<sup>1</sup> simple and widely used technique for deciding whether to make a change. As its name suggests, you simply add up the value of the benefits of a course of action, and subtract the costs associated with it.

Costs are either one-off, or may be ongoing. Benefits are most often received over time. We build this effect of time into our analysis by calculating a payback period. This is the time it takes for the benefits of a change to repay its costs. Many companies look for payback on projects over a specified period of time e.g. three years.

### How to Use the Tool:

In its simple form, cost-benefit analysis is carried out using only financial costs and financial benefits. For example, a simple cost benefit ratio for a road scheme would measure the cost of building the road, and subtract this from the economic benefit of improving transport links. It would not measure either the cost of environmental damage or the benefit of quicker and easier travel to work.

A more sophisticated approach to building a cost benefit models is to try to put a financial value on intangible costs and benefits. This can be highly subjective - is, for example, a historic water meadow worth \$25,000, or is it worth \$500,000 because of its environmental importance? What is the value of stress-free travel to work in the morning?

These are all questions that people have to answer, and answers that people have to defend.

The version of the cost benefit approach we explain here is necessarily simple. Where large sums of money are involved (for example, in financial market transactions), project evaluation can become an extremely complex and sophisticated art. The fundamentals of this are explained in [Principles of Corporate Finance](#) by Richard Brealey and Stewart Myers. The book is reviewed on the [MindTools.com](#) website.

### Example:

A sales director is deciding whether to implement a new computer-based contact management and sales processing system. His department has only a few computers, and his salespeople are not computer literate. He is aware that computerized sales forces are able to contact more customers and give a higher quality of reliability and service to those

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<sup>1</sup> Larger projects are evaluated using formal finance/capital budgeting, which takes into account many of the complexities involved with financial Decision Making. This is a complex area and is beyond the scope of this site, however books on capital budgeting are shown on the side bar



customers. They are more able to meet commitments, and can work more efficiently with fulfilment and delivery staff.

His financial cost/benefit analysis is shown below:

**Costs:**

New computer equipment:

10 network-ready PCs with supporting software @ \$2,450 each

1 server @ \$3,500

3 printers @ \$1,200 each

Cabling & Installation @ \$4,600

Sales Support Software @ \$15,000

Training costs:

Computer introduction - 8 people @ \$400 each

Keyboard skills - 8 people @ \$400 each

Sales Support System - 12 people @ \$700 each

Other costs:

Lost time: 40 man days @ \$200 / day

Lost sales through disruption: estimate: \$20,000

Lost sales through inefficiency during first months: estimate: \$20,000

Total cost: \$114,000

**Benefits:**

Tripling of mail shot capacity: estimate: \$40,000 / year

Ability to sustain telesales campaigns: estimate: \$20,000 / year

Improved efficiency and reliability of follow-up: estimate: \$50,000 / year

Improved customer service and retention: estimate: \$30,000 / year

Improved accuracy of customer information: estimate: \$10,000 / year

More ability to manage sales effort: \$30,000 / year

Total Benefit: \$180,000/year

Payback time:  $\$114,000 / \$180,000 = 0.63$  of a year = approx. 8 months

**TIP:**

The payback time is often known as the break even point. Sometimes this is more important than the overall benefit a project can deliver, for example because the organization has had to borrow to fund a new piece of machinery. The break even point can be found graphically by plotting costs and income on a graph of output quantity against \$. Break even occurs at the point the two lines cross.



Inevitably the estimates of the benefit given by the new system are quite subjective. Despite this, the Sales Director is very likely to introduce it, given the short payback time.

Key points:

Cost/Benefit Analysis is a powerful, widely used and relatively easy tool for deciding whether to make a change.

To use the tool, firstly work out how much the change will cost to make. Then calculate the benefit you will from it.

Where costs or benefits are paid or received over time, work out the time it will take for the benefits to repay the costs.

Cost/Benefit Analysis can be carried out using only financial costs and financial benefits. You may, however, decide to include intangible items within the analysis. As you must estimate a value for these, this inevitably brings an element of subjectivity into the process.

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Material sourced from [MindTools.com](http://MindTools.com) website.